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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/400,132	09/21/1999	YUNZHOU LI	2204/152	3049
34845	7590	03/23/2004	EXAMINER	
STEUBING AND MCGUINNESS & MANARAS LLP			KLIMACH, PAULA W	
125 NAGOG PARK			ART UNIT	PAPER NUMBER
ACTON, MA 01720			2135	70

DATE MAILED: 03/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/400,132

Applicant(s)

LI, YUNZHOU

Examiner

Paula W Klimach

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/4/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-92 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-92 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Response to Amendment

This office action is in response to amendment filed on 1/4/04 (Paper No. 6). Original application contained Claims 1-92. Applicant amended Claims 1, 2, 17, 32, 47, 63, and 78. The amendment filed on 1/4/04 have been entered and made of record. Therefore, presently pending claims are 1-92.

Response to Arguments

Applicant's arguments filed 1/4/04 have been fully considered but they are not persuasive because of following reasons.

Applicant argued "Applicants' have amended the independent claims of the present invention to more succinctly recite patentable limitations of the claims. For example, independent claim 1 has been amended to recite "...receiving a request from a requestor to join the multicast session for a time period... *selecting a virtual channel from a plurality of virtual channels for communications by the requestor in response to a desired time period of communication by the requestor...* " No such structure is shown or suggested in Matsumoto, Foladare or the combination thereof". This is not found persuasive due to the new grounds of rejection given below.

Therefore, the examiner asserts that the prior art does teach or suggest the subject matter broadly recited in independent Claims 1, 2, 17, 32, 47, 63, and 78. Dependent Claims 3-16, 18-31, 33-46, 48-62, 64-77, and 79-92 are also rejected at least by virtue of their dependency on independent claims and by other reason set forth in this office action (Paper No. 10). Accordingly, rejections for claims 1-92 are respectfully maintained.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-9, 11-14, 16-24, 26-29, 31-39, 41-44, 47-55, 57-60, 62, 63, 64-70, 72-75, 77-85, 87-90, and 92** are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (6,215,877 B1) in view of Foladare et al (6,073,235) and Punj et al (5,150,358).

In reference to claim 1 and 17, 47, 48, 64, 78, 79, Matsumoto discloses a method of managing virtual channels in a multicast session (column 2 lines 60-67), the method comprising: receiving a request from a requestor to join the multicast session for a time period (column 6 lines 30-32); assigning a virtual channel to the requestor based on the time period (column 10 lines 45-48) the key management server then generates the channel secret key again and the chat client requests the key management server to request a new key once the deadline is reached (column 10 lines 47-49); forwarding a virtual channel key to the requestor (column 6 lines 30-35). The system disclosed by Matsumoto rekeys the virtual channel key when membership of the virtual channel changes (column 10 lines 40-42).

Matsumoto does not disclose and forwarding the virtual channel key to all members of the virtual channel.

Foladare discloses a system of private broadcast communication. A subscriber in the system sends a private broadcast request to the private broadcasting device. If the

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communicating partners are available, the private broadcasting device assigns an encryption key and a channel number to the subscriber's terminal and to each of the participating terminals (column 1 lines 29-37).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the broadcasting device of Foladare to send the channel key to all the members of the channel in the broadcast system disclosed by Matsumoto. One of ordinary skill in the art would have been motivated to do this because the terminals communicate with each other privately excluding all other terminals that are not part of the private broadcast communication (column 1 lines 42-44).

However, neither Matsumoto nor Foladare expressly disclose using a desired time period of communication by the requestor as criteria to select a virtual channel from a plurality of virtual channels for communications.

Punj discloses a system wherein a process selects the virtual channel depending on the rate of the requestor (column 3 lines 12-36). Therefore, the higher the rate that the requestor selects, for the virtual channel, the less the time period the same amount of data would require for transmission. Thus the virtual channel is selected depending on the time period.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select the virtual channel depending on the rate as in the system disclosed by Punj in the system of Matsumoto. One of ordinary skill in the art would have been motivated to do this because higher priority would be given to those cells that require faster rates, therefore making communication faster for cells that require faster rates and slower for those that require slower communication.

2. In reference to claims 2, 18, 33, 65, 80, Matsumoto teaches a system wherein each virtual channel is associated with a time duration (Matsumoto column 10 lines 45-47). In this combination the virtual channels are associated with different rates in the system disclosed by Punj.

3. In reference to claims 3, 19, 34, 50, 66, and 81, Matsumoto suggests a system wherein it is possible for no member can be in more than one virtual channel. In the system the earlier mentioned member would be considered an outsider therefore would not receive the channel key as a result the communication would remain secret to this individual (Matsumoto column 3 lines 51-62).

4. In reference to claims 4, 20, 35, 51, 67, and 82, distributing a data key to each multicast virtual channel. Since the key relative to each channel is unique to that channel, then a data key is distributed to each multicast channel (Matsumoto column 4 lines 59-63).

5. In reference to claims 5, 21, 36, 52, 68, and 83 the virtual channels reside within one domain. The channels are suggested to exist in the same server (server 50 Fig 4).

6. In reference to claim 6, 7, 22, and 37, 53, the system disclosed by Matsumoto rekeys the virtual channel key when membership of the virtual channel changes (column 10 lines 40-42). The key is regenerated when a member withdraws, however, the client has to get the key and thus for rekeying to be completed, the client must request the key (column 10 lines 47-50).

7. In reference to claims 8, 23, 38, 54, 69, and 84, Matsumoto does not expressly disclose associating unlimited time duration with a virtual channel creating a permanent virtual channel.

Foladare discloses assigning channel numbers to different channels (column 1 lines 38-40). Further Foladare teaches the use of a preallocated request channel where a plurality of channels are assigned for a purpose (column 4 lines 14-20), and are therefore permanent with unlimited time duration.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to allocate a permanent channel for a specified purpose as taught in Foladare in the system disclosed by Matsumoto. One of ordinary skill in the art would have been motivated to do this because ready access to the private broadcasting device may be obtained (column 4 lines 19-20).

8. In reference to claims 9, 24, 39, 55, 70, and 85, wherein a member may join a virtual channel for less than the virtual channel's full time duration (column 10 lines 38-40).

9. In reference to claims 11, 12, 26-27, 41, 42, 57, 58, 72, 73, 87, and 88, Foladare suggests reassigning time duration for a virtual channel if a virtual channel is freed (column 3 lines 65 to column 4 line 5). The time interval for the communication is one of the variables associated with the channel and as a result changes whenever the communication that uses the channel is changed. Foladare monitors the time estimated time intervals for a channel and therefore can change the time duration for all virtual channels when one is freed.

10. In reference to claims 13 and 14, 28, 29, 43, 44, 59, 60, 74, and 89, the virtual channel is freed when an upper member expires (Matsumoto column 10 lines 40-42). The channel key is changed when the membership changes, since each channel in the system disclosed by Matsumoto has a unique key (column 4 lines 59-63), therefore the channel is freed and a new channel is created with a new key. Matsumoto suggest the virtual channel is freed when all

members expire. When there is no communication between the members of a channel for a predetermined amount of the channel is freed by changing the secret key (column 10 28-34). The communication ceasing for a predetermined amount of time is a way of showing that the members have expired.

11. In reference to claims 16 and 31, 62, 77, and 92, wherein only the freed virtual channel rekeys the virtual channel key to all members of the freed virtual channel (column 10 lines 47-55).

12. **Claim 10, 15, 25, 30, 40, 45, 46, 56, 61, 71, 76, 86, and 91** are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto, Foladare, and Punj as applied to claim 2 above, and further in view of Kadansky (6,295,361 B1).

The combination of Matsumoto and Foladare do not expressly disclose creating a lower and upper bound for the virtual channel based on the time duration of the virtual channel.

Kadansky teaches the new and old key being used for a predetermined period of time (Fig.7 column 9 lines 50-53). The predetermined period has an upper bound and a lower bound, which make up the period. The act of reassigning further comprises the step of reconfiguring the lower and upper bounds of all virtual channels. The channels disclosed by Kadansky have new group keys and time values sent when a new channel is created (column 8 lines 29-31), channels are separated by use of different keys.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to create a time period in which a channel is viable as in Kadansky in the combination of Matsumoto and Foladare. One of ordinary skill in the art would have been

motivated to do this because the key manager needs to coordinate with the senders to make sure that all the senders have received the new key and packet number (column 9 lines 11-15).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

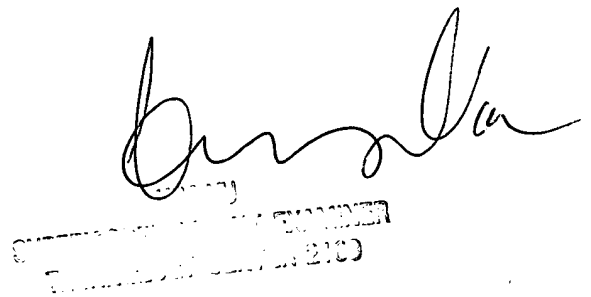
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paula W Klimach whose telephone number is (703) 305-8421. The examiner can normally be reached on Mon to Thr 9:30 a.m to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on (703) 305-4393. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PWK
Friday, March 19, 2004

A handwritten signature in black ink is written over a rectangular stamp. The signature is cursive and appears to read "B. J. ...". The stamp is partially obscured by the signature but contains the word "EXAMINER" and the number "2135" at the bottom.